

Intraoperative Technology

Ultrasound In Neurosurgery

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MASSACHUSETTS
GENERAL HOSPITAL

NEUROSCIENCE

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WEBINAR | APRIL 29, 2021

MGH
1811

**INTRAOPERATIVE
ULTRASOUND**

STATE OF THE ART USAGE OF INTRAOPERATIVE
ULTRASOUND IN NEUROSURGERY

COURSE DIRECTORS

 Brian Nahed, MD, MSc
Neurosurgeon | Neurosurgical Oncologist
Neurosurgical Oncology / Brain Tumor
Surgeon / MGH Brain Tumor Center
Associate Professor, Harvard Medical
School
Associate Director MGH Neurosurgery
Program and Neurosurgical Spine

 Geirmand Ustgård, MD, PhD
Neurosurgeon (Retired) | Professor
Emeritus of Neurosurgery at the
Norwegian University of Science and
Technology (NTNU)
Former Chief of Neurosurgical Dept and
Head of Neurodivision, St Olav
University Hospital

Sponsors

We would like to thank the following companies for their educational grant support:

- BK,
- Brainlab,
- SonoClear

Disclosures

- React Neuro
- Robeaute
- Brainlab
- BK

MGH Ultrasound Course Agenda

Introduction

Brian Nahed, MD, MsC /
Geirmund Unsgard, MD

Overview of Intra-operative imaging (ioUS, iCT, iMRI)

Brian Nahed MD, MsC

Mastering ioUS – Skills and techniques required

Aliasgar Moiyadi, MBBS,
MS, DNB General Surgery,
MCh, DNB Neurosurgery

Ultrasound in Brain Tumor Resection. (Anatomy, landmarks)

Francesco DiMeco, MD

Navigated 3D Ultrasound in Brain Tumor Resection (Tricks/tips)

Geirmund Unsgard, MD

Contrast-enhanced ultrasound and Elastography

Francesco Prada, MD

Ultrasound in Hydrocephalus, Endoscopy, Chiari Decompression

Llewellyn Padayachy, MD

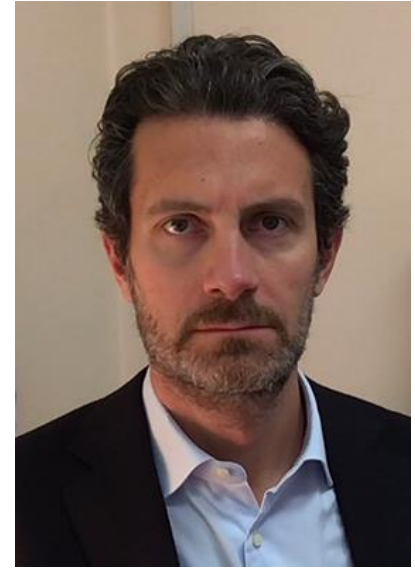
Panel Discussion on Ultrasound in Neurosurgery

Geirmund Unsgard, MD;
Moiyadi, DiMeco, MBBS,
MS, DNB General Surgery,
MCh, DNB Neurosurgery;
Alessandro Perin, Francesco
Prada, MD Llewellyn
Padayachy, Brian Nahed,
MD, MsC

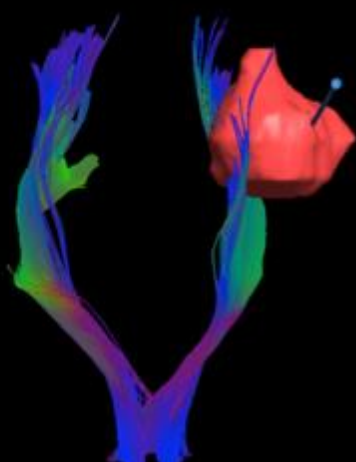
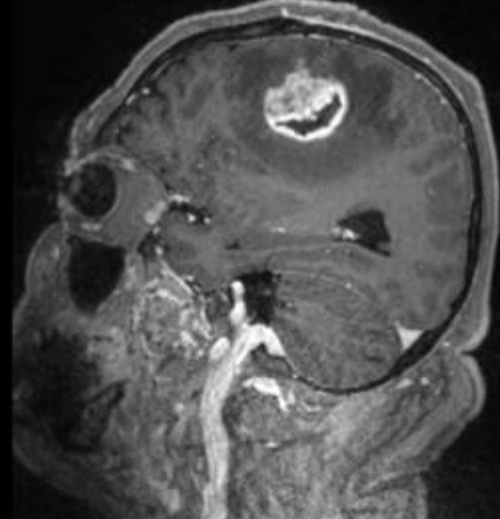
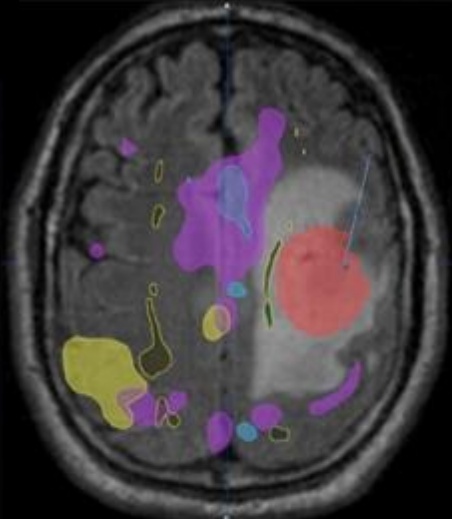
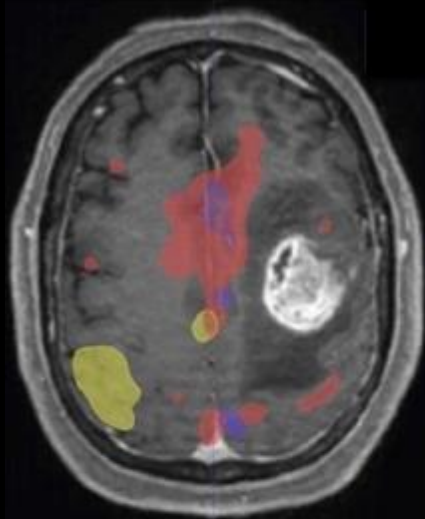
Hands on Ultrasound Simulation

Alessandro Perin, MD, PhD

MGH Ultrasound Course Faculty



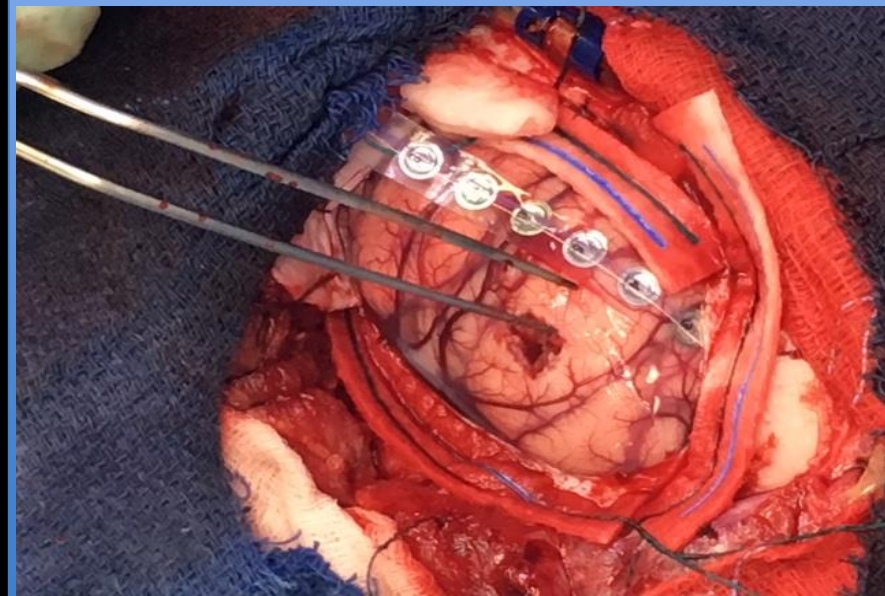
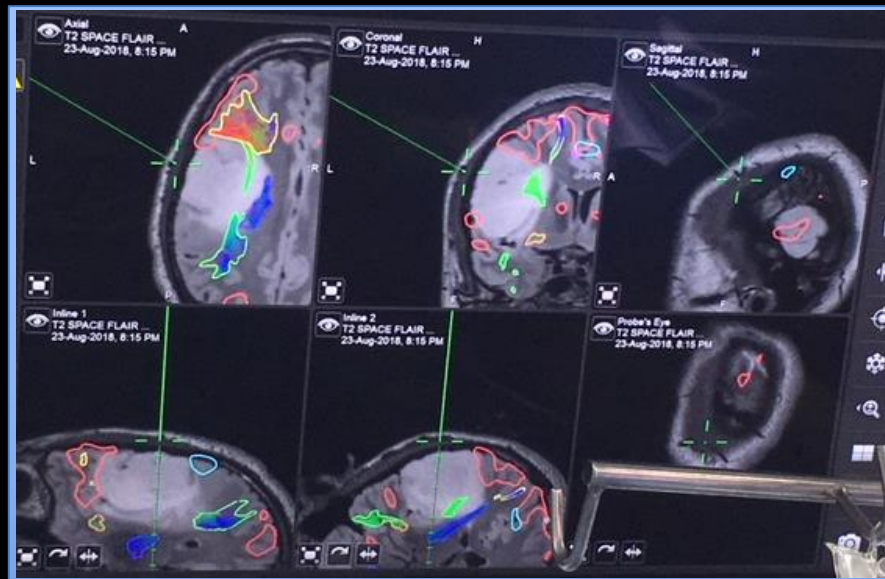
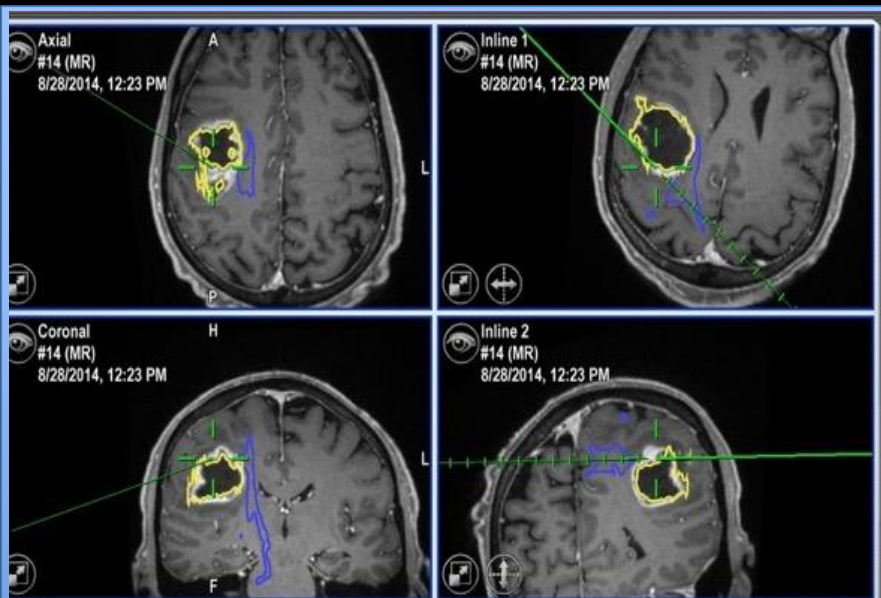
Neurosurgical Innovation



- | | |
|--|-------------------|
| | Enhancing tumor |
| | Left CST |
| | Left Foot |
| | Left Foot Motor 1 |
| | Left Foot Motor 2 |
| | Left Hand |
| | Left Hand Motor 1 |
| | Left Hand Motor 2 |
| | Right CST |
| | Right Hand Mot. |



Neurosurgical Innovation



Intraoperative Real-Time Imaging

iMRI



iCT



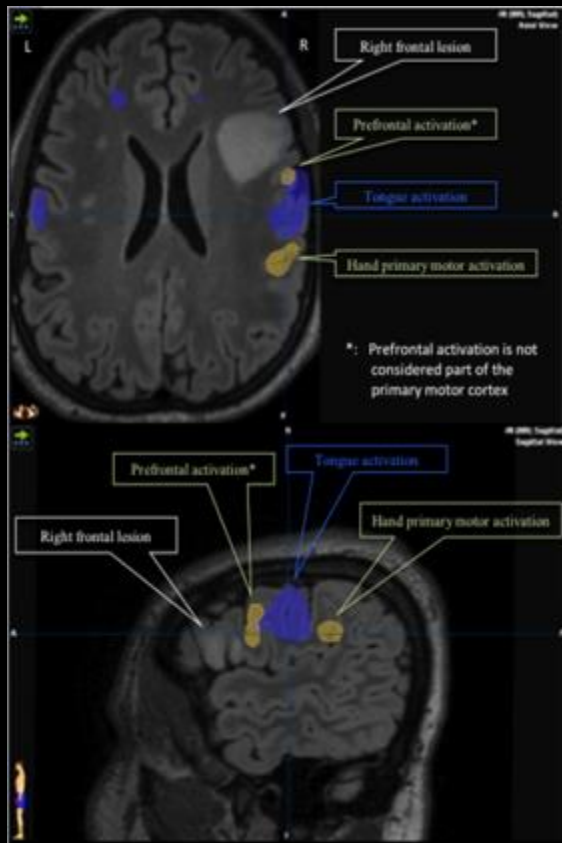
Ultrasound



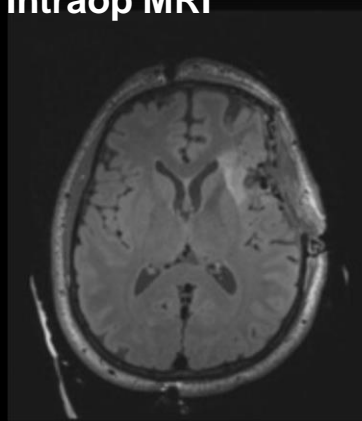
Intraoperative MRI



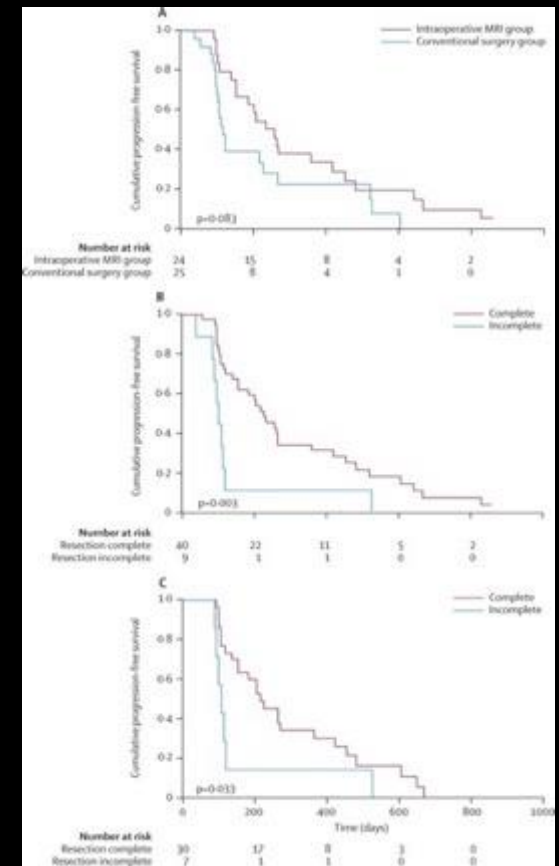
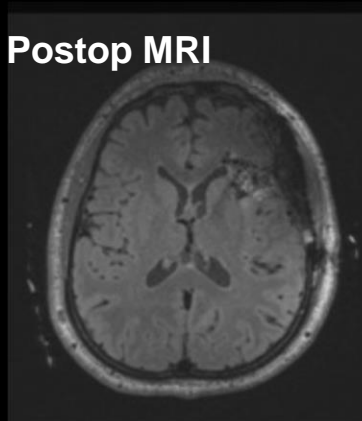
MRI



Intraop MRI



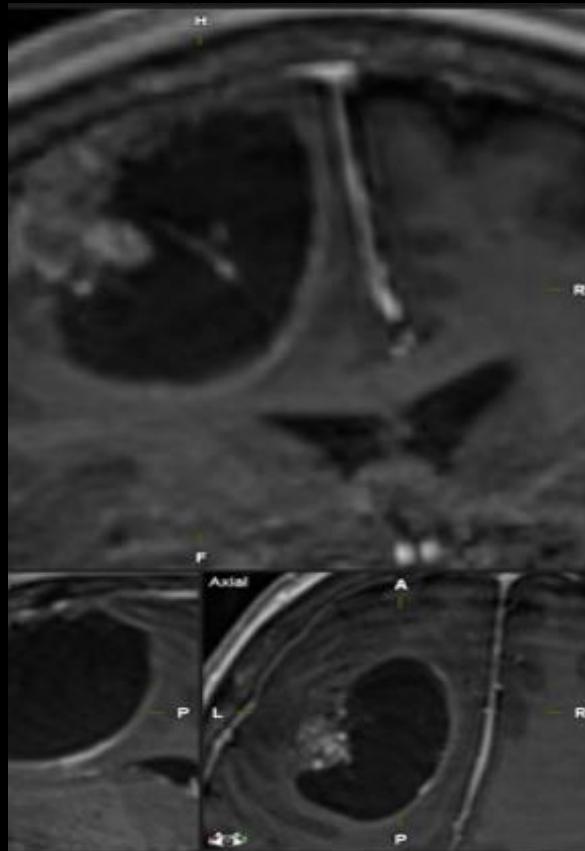
Postop MRI



Intraoperative Ultrasound



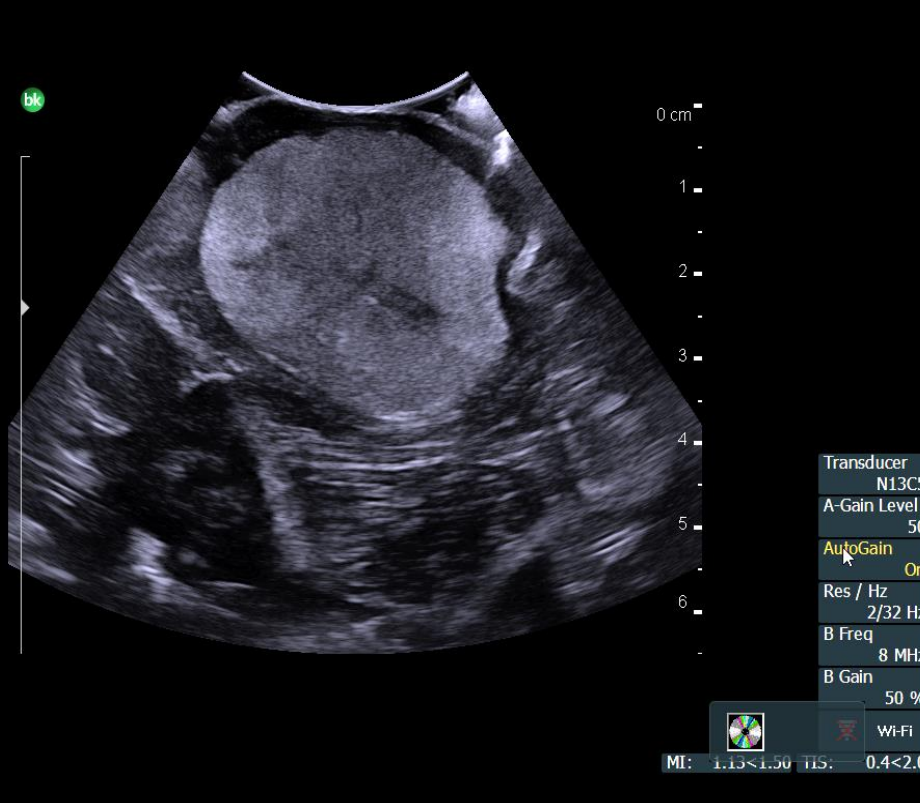
MRI



Intraop Ultrasound



Intraoperative Ultrasound



Intraoperative Technology

